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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,599	03/25/2004	Huayan Amy Wang	SBL01611	7239

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EXAMINER	
DAVIS, ZACHARY A	
ART UNIT	PAPER NUMBER
2437	

NOTIFICATION DATE	DELIVERY MODE
03/12/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing.US@motorola.com

Office Action Summary	Application No.	Applicant(s)	
	10/809,599	WANG, HUAYAN AMY	
	Examiner	Art Unit	
	Zachary A. Davis	2437	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-17,19-23,25-35,40 and 41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-17,19-23,25-35,40 and 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A response was received on 01 December 2009. By this response, Claims 1, 4, 8, 19, 20, and 26 have been amended. No claims have been added or canceled. Claims 1, 2, 4-17, 19-23, 25-35, 40, and 41 are currently pending in the present application.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 2, 4-17, 19-23, 25-35, 40, and 41 have been considered but are moot in view of the new ground(s) of rejection.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Independent Claims 1 and 19 have been amended to include the limitation that state information in a state table includes a portion of a last used initialization vector. However, there does not appear to be proper antecedent basis for this limitation in the specification. There does not appear to be any mention of the initialization vectors with respect to discussion of the state information (see paragraph 0023 of the specification). Further, there does not appear to be any mention

of the state table or state information with respect to discussion of the initialization vector (see paragraph 0035 of the specification). For further detail, see below with respect to the rejection under 35 U.S.C. 112, first paragraph, for failure to comply with the written description requirement.

Claim Objections

4. The objections to Claims 8 and 26 for informalities are withdrawn in light of the amendments to the claims.

Claim Rejections - 35 USC § 112

5. The rejection of Claims 1, 2, 4-17, 19-23, 25-35, 40, and 41 under 35 U.S.C. 112, second paragraph, as indefinite is withdrawn in light of the amendments to the claims.

6. It is again noted that, in Claim 19, the limitation of "a state transition history for each of said mobile units" (see line 12 of the claim) may have been intended to read "for each of said access points", upon consideration that the state information in Claim 19 is claimed with respect to the access points and not the mobile units (see lines 7-8 of the claim).

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1, 2, 4-17, 19-23, 25-35, 40, and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent Claims 1 and 19 have been amended to include the limitation that state information in a state table includes a portion of a last used initialization vector. However, there does not appear to be sufficient written description of this limitation in the specification. There appears to be no mention of the initialization vectors with respect to the discussion of the state information (see paragraph 0023 of the specification). Further, there appears to be no mention of the state table or state information with respect to the discussion of initialization vector (see paragraph 0035 of the specification), nor does there appear to be any disclosure of storing a portion of an initialization vector (paragraph 0035). Additionally, Applicant has not pointed out where in the specification the new claim limitations are supported. See MPEP § 2163.04(I)(B).

Claims not specifically mentioned above are rejected due to their dependence on a rejected base claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 2, 4-17, 19-23, 25-35, 40, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macaulay, US Patent Application Publication 2003/0135762, in view of Hrastar, US Patent 7042852, and Nessett et al, US Patent 7480939.

In reference to Claim 1, Macaulay discloses a method for detecting unauthorized attempts to access a wireless data communication system, where the method includes forwarding one or more packets received by an access point to a computer that compares the format of the packets to a format specified by a protocol (see paragraphs 0045-0046 and 0095-0107; note also paragraphs 0032-0035 and 0042 where the wireless network is monitored), and signaling an alert if the packets deviate from the protocol specified format (see paragraphs 0049-0050). Macaulay further discloses maintaining a history for the mobile units (see paragraphs 0043-0044, 0091, where detailed network analysis is logged). However, Macaulay does not explicitly disclose maintaining a state table storing state information for the mobile units, where the state information is also used to signal an alert.

Hrastar discloses a method in which a state table including state information for mobile units is stored (column 28, line 64-column 29, line 4, where the data store includes a state data store and a station database; column 29, lines 5-17), where the state information includes at least a MAC address parameter, an authentication status parameter, and a further parameter unrelated to the MAC address parameter and authentication status parameter (column 29, lines 5-17, where the station database includes information including a device address, communications state, and other parameters, where the address is a MAC address, column 26, lines 41-46, the "state" corresponds to the claimed authentication status, and the timestamps and byte counts, for example, correspond to the claimed unrelated parameters), and an alert is signaled if packets deviate from the stored state information (column 30, lines 35-43). Therefore, it would have been obvious to one of ordinary skill in the art to modify the method of Macaulay to include state information, in order to enhance network security (Hrastar, column 5, lines 21-22). Further, in combination with the history/logging disclosed by Macaulay (Macaulay, paragraphs 0043-0044 and 0091), the inclusion of state information (Hrastar, column 28, line 64-column 29, line 17) would also suggest maintaining a history of the states of the mobile units, and therefore, it also would have been obvious to one of ordinary skill in the art to modify the method of Macaulay to include a state history of the mobile units, in order to enhance network security (Hrastar, column 5, lines 21-22). However, while Macaulay and Hrastar generally disclose the use of an initialization vector (Hrastar, column 35, lines 51-54; see also Macaulay, paragraph 0107, for example, where versions of the 802.11 protocol include the use of

initialization vectors), neither Macaulay nor Hrastar explicitly discloses storing state information that includes a portion of a last used Initialization Vector.

Nessett discloses a method in which an Initialization Vector can be used as anti-replay information through their use in detecting replays of data frames encrypted by the same key (column 15, lines 22-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of Macaulay and Hrastar to include a portion of a previously used initialization vector in the state information for the mobile unit, in order to help protect against replay attaks (see Nessett, column 15, lines 22-34).

In reference to Claim 2, Macaulay, Hrastar, and Nessett further disclose a header message portion and comparing the format of the header portion to the protocol specified format (see Macaulay, the table following paragraph 0094).

In reference to Claim 4, Macaulay, Hrastar, and Nessett further disclose comparing format of a frame control field to detect inconsistencies in a protocol version field (see Macaulay, the table following paragraph 0094; see also paragraphs 0083 and 0107, where protocol version/framework is monitored and manipulation of the protocols is recognized, and paragraphs 0049-0050, where an alarm is generated if attacks are detected; see also Hrastar, column 30, lines 35-43, where an alarm is generated if inconsistencies with the stored state information are detected).

In reference to Claims 5 and 6, Macaulay, Hrastar, and Nessett further disclose Management and Control frames (see Macaulay, the table following paragraph 0094; see also paragraph 0099).

In reference to Claims 7 and 8, Macaulay, Hrastar, and Nessett further disclose comparing a WEP flag value (see Macaulay, paragraph 0104; see also paragraphs 0082-0086 and 0107, where WEP is among the attributes being monitored and manipulation of the protocols is recognized, and paragraphs 0049-0050, where an alarm is generated if attacks are detected; see also Hrastar, column 30, lines 35-43, where an alarm is generated if inconsistencies with the stored state information are detected).

In reference to Claim 9, Macaulay, Hrastar, and Nessett further disclose a protocol version (see, for example, Macaulay, paragraphs 0083 and 0107, where protocol version/framework is monitored and manipulation of the protocols is recognized, and paragraphs 0049-0050, where an alarm is generated if attacks are detected; see also Hrastar, column 30, lines 35-43, where an alarm is generated if inconsistencies with the stored state information are detected).

In reference to Claims 10 and 11, Macaulay, Hrastar, and Nessett further disclose source MAC addresses that are multicast and broadcast addresses (see Macaulay, paragraphs 0124, 0127).

In reference to Claims 12-15, 17, and 40, Macaulay, Hrastar, and Nessett further disclose monitoring for a possible denial of service attack (Macaulay, paragraph 0106) and that the packets may contain unsupported values and lengths (Macaulay, paragraph 0107, for example, where values in the 802.11 protocol that could be manipulated include Power Management, More Data, Type, and SubType fields) and that the state table could include a power management mode (Macaulay, paragraph

0107, where the 802.11 protocol includes Power Management; paragraph 0091, where detailed network analysis is logged; Hrastar, column 29, lines 5-17, regarding the state table itself; see also, column 3, line 57-column 4, line 17, where the 802.11 standards are incorporated by reference, and section 11.2 of the 802.11 standard).

In reference to Claim 16, Macaulay, Hrastar, and Nessett further disclose detecting a spoofed MAC address (Macaulay, paragraphs 0095, 0101).

In reference to Claim 19, Macaulay discloses a method for detecting unauthorized attempts to access a wireless data communication system, where the method includes forwarding one or more packets received by a mobile unit to a computer that compares the format of the packets to a format specified by a protocol (see paragraphs 0045-0046 and 0095-0107; note also paragraphs 0032-0035 and 0042 where the wireless network is monitored), and signaling an alert if the packets deviate from the protocol specified format (see paragraphs 0049-0050). Macaulay further discloses maintaining a history for the mobile units (see paragraphs 0043-0044, 0091, where detailed network analysis is logged). However, Macaulay does not explicitly disclose maintaining a state table storing state information for the mobile units, where the state information is also used to signal an alert.

Hrastar discloses a method in which a state table storing state information for mobile units is stored (column 28, line 64-column 29, line 4, where the data store includes a state data store and a station database; column 29, lines 12-17), where the state information includes at least a MAC address parameter, an authentication status

parameter, and a further parameter unrelated to the MAC address parameter and authentication status parameter (column 29, lines 5-17, where the station database includes information including a device address, communications state, and other parameters, where the address is a MAC address, column 26, lines 41-46, the "state" corresponds to the claimed authentication status, and the timestamps and byte counts, for example, correspond to the claimed unrelated parameters), and an alert is signaled if packets deviate from the stored state information (column 30, lines 35-43). Therefore, it would have been obvious to one of ordinary skill in the art to modify the method of Macaulay to include state information, in order to enhance network security (Hrastar, column 5, lines 21-22). Further, in combination with the history/logging disclosed by Macaulay (Macaulay, paragraphs 0043-0044 and 0091), the inclusion of state information (Hrastar, column 28, line 64-column 29, line 17) would also suggest maintaining a history of the states of the mobile units, and therefore, it also would have been obvious to one of ordinary skill in the art to modify the method of Macaulay to include a state history of the mobile units, in order to enhance network security (Hrastar, column 5, lines 21-22). However, while Macaulay and Hrastar generally disclose the use of an initialization vector (Hrastar, column 35, lines 51-54; see also Macaulay, paragraph 0107, for example, where versions of the 802.11 protocol include the use of initialization vectors), neither Macaulay nor Hrastar explicitly discloses storing state information that includes a portion of a last used Initialization Vector.

Nessett discloses a method in which an Initialization Vector can be used as anti-replay information through their use in detecting replays of data frames encrypted by the

same key (column 15, lines 22-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of Macaulay and Hrastar to include a portion of a previously used initialization vector in the state information for the mobile unit, in order to help protect against replay attaks (see Nessett, column 15, lines 22-34).

Claims 20-23, 25-35, and 41 recite limitations corresponding to and similar to those recited in Claims 2, 4-17, and 40, and are rejected by a similar rationale.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Jensen et al, US Patent 7171615, discloses a method in which time stamps are used to prevent replay of packets and produce initialization vectors.

b. Harvey et al, US Patent 7603710, discloses a method in a WLAN in which changes in state are monitored and a state transition table is maintained.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary A. Davis whose telephone number is (571)272-3870. The examiner can normally be reached on weekdays 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary A Davis/
Primary Examiner, Art Unit 2437